

Biological Control Work Plan for Calendar Year 2009

Cooperator:	Kansas Department of Agriculture, Plant Protection and Weed Control	
State:	Kansas	
Project Title:	Spotted Knapweed (<i>Centaurea stoebe</i> L.)biological control using the lesser knapweed flower weevil (<i>Larinus minutus</i>)and the knapweed root weevil (<i>Cyphocleonus achates</i>)	
Project Coordinator:	Laurinda Ramonda	
Agreement Number	09-8453-1227-CA	
Contact Information:	Address: P.O. Box 19282 Topeka, KS 66619	
	Phone: (785) 862-2180	Fax: (785) 862-2182
	Email Address: <u>laurinda.ramonda@kda.ks.gov</u>	

I. BACKGROUND INFORMATION

A. Provide a brief description of the issue

Spotted knapweed is an invasive biannual weed that invades cropland, pastures, fallow ground, and non-crop areas. Considering spotted knapweed is also a substantial problem in neighboring states, Kansas has listed spotted knapweed on its Invasive Weed Watch List. Kansas ranks in the United States number one in wheat production, 10th in corn for grain, 11th for soybeans, and 5th for forage, demonstrating Kansas' importance to US agriculture. Preventing the spread of invasive species, like spotted knapweed, becomes a priority so that Kansas agriculture does not suffer. Several infestations of spotted knapweed are known to exist in Kansas, but for the most part an extensive survey has not been completed. Understanding where spotted knapweed exists is crucial to controlling the spread of this invasive species. In addition, an integrated weed management approach combines the efforts of several weed management practices including chemical, biological, and mechanical. Combining the efforts of chemical, mechanical and biological control will result in better weed management than chemical alone. Subsequently, to keep the spotted knapweed population in Kansas in check, it has become important to pursue various control approaches, including biological control.

B. Indicate

Is this a new project? ☒ YES ☐ NO

Is this a continuation of a previously funded agreement? ☐ YES ☒ NO. If yes, have all progress reports been submitted? Explain.

II. OBJECTIVES, NEED FOR ASSISTANCE, BENEFITS EXPECTED

A. Specific Objectives of the Project (List if more than one)

- Survey for spotted knapweed to determine extent of population in Kansas.
- Release *Larinus minutus* and *Cyphocleonus achates* for biological control on spotted knapweed known infestation in Nemaha (primary) or Jackson (secondary) Counties.
- Monitor *Larinus minutus* and *Cyphocleonus achates* populations and spotted knapweed population after release.
- Establish an insectary for future *Larinus minutus* and *Cyphocleonus achates* releases in Kansas.

B. Justify how the funding will facilitate the cooperator in carrying a Biological Control Project that targets a pest of concern to APHIS

Spotted knapweed is a species of concern for APHIS and has historically been funded for biological control programs. In addition, spotted knapweed is listed on the Kansas' Invasive Weed Watch List because of its invasive characteristics and substantial problems it causes in neighboring states.

C. Indicate the economical or environmental impact of the pest (i.e., economic losses caused by the pest, mitigation costs, cost of the invasive species)

In 2007, there was 10.4 million acres of wheat, 3.9 million acres of corn, 2.6 million acres of soybeans, and 2.1 million acres of forage harvested in Kansas. In addition, the values of those crops were: wheat was \$1.8 billion, Corn was \$2 billion, soybeans were \$891 million, and Hay was \$602 million. Control costs can range from \$9 to \$40 per acre depending in which crop the spotted knapweed is present. Preventing the spread of invasive species, like spotted knapweed, becomes a priority so that Kansas agriculture does not suffer. Not only are there economical impacts of spotted knapweed, but environmental impacts too. Spotted knapweed can out-compete native vegetation creating a monoculture that does not favor wildlife.

D. Describe the expected benefits of conducting the activities in the work plan

Establishing a biological control organism will provide a longer term solution for the control of spotted knapweed. In addition, a biological control organism for spotted knapweed will aid in the implementation of an integrated weed management plan. Combining the efforts of chemical, mechanical and biological control will result in better weed management than chemical alone.

III. RESULTS

A. What are the anticipated results and successes?

- The project would include a spotted knapweed survey that would expand our

- knowledge of the extent of spotted knapweed in Kansas.
- Reduce the spread of spotted knapweed.
- Reduce the competitiveness of spotted knapweed so that native vegetation will have the chance to flourish.
- Establish an insectary for future releases in Kansas

B. Describe how results will:

1. Reduce mitigation costs of managing the pest

Reduce the control costs, which can range from \$9 to \$40 per acre depending in which crop the spotted knapweed is present. In addition, preventing the spread of spotted knapweed will reduce future economic impact.

2. Minimize negative impacts on non-targets

Larinus minutus and *Cyphocleonus achates* are approved by APHIS and has minimal non-target effect.

3. Establish biocontrol agents

Larinus minutus and *Cyphocleonus achates* will be released and then monitored over a few years in hopes of it providing an established population.

4. Reduce pest densities

Larinus minutes adults lay eggs on spotted knapweed flowers throughout the summer. The larva hatch, feeding on the developing seed. This reduces the production of new seed and thus after a few years, a reduction in the density of spotted knapweed. *Cyphocleonus achates* adults lay eggs at the base of the plant and the larva feed on the taproot of the plant. This feeding goes on through summer with adults emerging in mid-august. Working in combination, these insects have reduced spotted knapweed populations significantly.

C. Select which of the following OUTPUTS will be achieved by the termination date: (Select YES, NO, or N/A for each output) * N/A is non-applicable.

- | | | | |
|--|---|--|---|
| • New rearing techniques | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A * |
| • Effective or improved rearing techniques | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • New potential BC species identified, studied, or collected | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Effective or improve field site evaluation techniques | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Effective or improve surveying techniques for pest or agent | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Effective or improve monitoring techniques for pest or agent | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Publications or educational material | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Training | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Other | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |

Explain here for Other:

For OUTPUTS selected as YES, provide a description:

- Either success or failure of biological control release will help improve field site selection criteria.
- We will be surveying the spotted knapweed infested area before and after

biological control release.

- After the biological control release, we will monitor the site for *Larinus minutus* and *Cyphocleonus achates* plant injury symptoms and adults. In addition we will monitor the spotted knapweed density in the release area.

IV. APPROACH

A. Plan of Action for the proposed objectives - Describe the work to be performed under this work plan. The narrative is to include any information or data that will be shared with APHIS.

During the months of June and July, a statewide survey to detect spotted knapweed will take place. The timing of this survey will coincide with the flowering of spotted knapweed to make observing and identification less complicated. The survey will focus on areas that would be more likely to contain spotted knapweed. For example, the survey will focus on areas near already known infestations and counties that border states with known infestations. Locally, the surveyor will look for spotted knapweed in road ditches, hay meadows, hay storage facilities, etc. There will be 300 observations, with the focus being on the bordering counties and near already known infested areas in Kansas. Information gathered will include: approximate area infested (if any), location (GPS coordinates), and cropping situation. Samples will be screened by:

Jeff Vogel
State Weed Specialist
Kansas Dept. of Agriculture
Plant Protection & Weed Control
P.O. Box 19282
Topeka, KS 66619-0282

Included with the structured survey, will be outreach and training curriculum provided to all Kansas county weed directors. Pamphlets on spotted knapweed identification will be mailed out in early summer, training weed directors and encouraging them to report any suspect infestations to the KDA.

In addition, during the month of July, we are planning a release of *Larinus minutus* and then in August, a release of *Cyphocleonus achates* in Nemaha (primary) or Jackson County (secondary), Kansas. *Larinus minutus* and *Cyphocleonus achates* will be obtained from a commercial biological control company. Prior to any release, the density of spotted knapweed will be measured using a quadrat. Separate measurements will be taken for rosettes and bolted plants. Late summer/early fall, spotted knapweed densities will be measured with a quadrat and there will be a survey to monitor the survival of *Larinus minutus* and *Cyphocleonus achates* adults using a sweep net. Even with the fall density measurement, it is expected that the main effect of *Larinus minutus* and *Cyphocleonus achates* on spotted knapweed may not be known for a number of years. All data from the survey, release, and monitoring will be taken with a PDA/GPS and analyzed in ArcGIS. Information on Pest and biological control organism will be shared with APHIS by entering it into the NAPIS database.

B. Indicate which of the following activities will be performed:

(Select YES, NO, or N/A for each output) * N/A is non-applicable.

- | | | | |
|---|---|--|---|
| • Survey of pests | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A * |
| • Survey of BC agents | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Environmental release of BC agents | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • BC agent collection – offshore | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • BC agent collection – field | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • BC agent distribution from lab or insectaries | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Monitoring of pest | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Monitoring of BC agents | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Pre-release evaluation, development, or screenings of agent | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Pre-release site selection and evaluation | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Post-release site evaluation | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Post-release evaluation of impacts on non-targets | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Post-release evaluation of agent's efficacy | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Rearing of BC agents | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Mapping of pest or BC agent | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Outreach or education | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Training | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Partnering or Networking | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Techniques or methods development | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Technology transfer | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Other | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |

Explain here for Other:

For Activities selected as YES, provide a description:

- Spotted knapweed will be surveyed in high risk areas.
- *Larinus minutus* and *Cyphocleonus achates* will be released in Nemaha (primary) or Jackson (secondary) County, Kansas.
- After biological control agent release, spotted knapweed will be monitored.
- After releases, there will be a survey to monitor the survival of *Larinus minutus* and *Cyphocleonus achates* adults using a sweep net.
- Prior to release, a site will be evaluated and selected based on spotted knapweed density, acreage, and ease of access.
- After release, the site will be monitored for spotted knapweed using a quadrat to sample plant density. Although, it is expected that the main effect of biological control will not be known for several years.
- After release, the site will be monitored for spotted knapweed using a quadrat to sample stem density. Although, it is expected that the main effect of biological control will not be known for several years.
- Spotted knapweed populations and *Larinus minutus* and *Cyphocleonus achates* will be mapped and analyzed using ArcGIS
- Information on spotted knapweed identification will be provided to all Kansas county weed directors. In addition Information on the release *Larinus minutus* and *Cyphocleonus achates* will be published on the KDA website and shared with the county weed directors of Kansas.
- The Kansas Department of Agriculture will partner with the Nemaha (primary) and Jackson (secondary) County Weed Department in

establishment of biological control site.

C. Contingencies - Include other approaches that will be considered if the work plan produces results sooner, later, or different than what you anticipate.

- Failure to establish a *Larinus minutus* and/or *Cyphocleonus achates* population will result in additional attempts to establish this biological control organism.
- Earlier establishment will result in a collectable population allowing us to move *Larinus minutus* and *Cyphocleonus achates* to other counties in Kansas in which spotted knapweed is established.

D. What is the quantitative projection of accomplishments to be achieved?

- Establish *Larinus minutus* and *Cyphocleonus achates* in Nemaha or Jackson County, Kansas.
- Map and analyze data using ArcGIS.
- Submit data to NAPIS and state survey database.
- Add information to KDA webpage and share information with Kansas county weed directors.

1. By activity or function, what are the anticipated accomplishments by month, quarter, or other specified intervals?

Month	Activity
June	Mail out informational pamphlets to weed directors
June-July	Survey for spotted knapweed
July	Release <i>Larinus minutus</i>
August	Release <i>Cyphocleonus achates</i>
August - October	Monitor spotted knapweed and <i>Larinus minutes</i> and <i>Cyphocleonus achates</i>

2. What criteria will be used to evaluate the project?

- All data collected from the biological control project is entered into the state survey database and NAPIS database.
- Maps of the biological control project activities are produced to aid in decision making, control measures, and management of this pest.
- State CAPS and KDA meetings to keep updated on issues.

3. What methodology will be used to determine if identified needs are met?

- Review of the accomplishment reports and maps.
- State CAPS and KDA meetings to keep updated on issues.
- Periodic surveying of pest and biological control agent using quadrats to

sample spotted knapweed densities and sweep nets to monitor *Larinus minutus* and *Cyphocleonus achates*.

4. What methodology will be used to determine if Results and benefits are achieved?

- Final map and data collected that was originally set forth in workplan.
- Infestation maps are completed and final report is sent to USDA.

VI. RESOURCES

A. What resources are required to perform the work?

- KDA staff will perform pre-site selection, releasing and monitoring activities.
- Temporary staff will be hired to perform the spotted knapweed survey in higher risk areas.
- GPS unit to map, survey, and monitor release site.
- Purchase of *Larinus minutus* and *Cyphocleonus achates*.
- Rental or state vehicles are required travel to and from release site.
- Provided by Cooperator, office space with associated services and utilities, computers and other office equipment for the use of Cooperator personnel. These include digital camera, PDA with GPS unit, and computer with GIS and internet service. Computers will be used for entering survey data into the state survey database and NAPIS database.

1. What numbers and types of personnel will be needed, and what will they be doing?

- KDA staff will perform surveying, pre-site selection, releasing and monitoring activities.
- Temporary staff will be hired to perform the spotted knapweed survey in higher risk areas.

2. What equipment will be needed to perform the work? Include major items of equipment with a value of \$5,000 or more.

- N/A

a. What equipment will be provided by the cooperator?

- N/A

b. What equipment will be provided by APHIS?

- N/A

c. What equipment will be purchased in whole or in part with APHIS funds?

- N/A

d. How will the equipment be used?

- N/A

e. What is the proposed method of disposition of the equipment upon termination of the agreement/project?

- N/A

3. Identify information technology equipment, e.g., computers, and their ancillary components. *All information technology supplies (e.g., small items of equipment, connectivity through air cards or high speed internet access, GPS units, radios for emergency operations etc.) should be specifically identified.*

- Computers with internet access
- PDA with GPS
- Digital camera

4. What supplies will be needed to perform the work? Identify individual supplies with a cumulative value of \$5,000 or more as a separate item.

- N/A

a. What supplies will be provided by the Cooperator?

- N/A

b. What supplies will be provided by APHIS?

- N/A

c. What supplies will be purchased in whole or in part with APHIS funds?

- N/A

d. How will the supplies be used?

- N/A

e. What is the proposed method of disposition of the supplies with a cumulative value over \$5,000 upon termination of the agreement/project?

- N/A

**5. What procurements will be made in support of the funded project and what is the method of procurement (e.g., lease, purchase)?
(Cooperator procurements shall be in accordance with OMB Circulars A-102 or A110, as applicable.)**

- Purchase *Larinus minutus* and *Cyphocleonus achates*.
- The Fiscal Department at the Kansas Department of Agriculture will handle most contracts.
- Most procurements will be made by purchase.

6. What are the travel needs for the project?

- Travel will be required to survey sites by use of a KDA or rental vehicle. The KDA Plant Protection and Weed Control Plant Program Manager is the approving official. Costs are included in the financial plan.
- Lodging may be required for longer distance travel. The KDA Plant Protection and Weed Control Plant Program Manager is the approving official. Costs are included in the financial plan.

a. Is there any local travel to daily work sites? Who is the approving official? What are the methods of payment? Indicate rates and total costs in the Financial Plan.

- Travel will be required to biological control or survey sites by use of a KDA or rental vehicle.
- The KDA Plant Protection and Weed Control Plant Program Manager is the approving official. Costs are included in the financial plan.
- The Fiscal Department at the Kansas Department of Agriculture will handle most contracts.
- Most procurements will be made by purchase.

b. What extended or overnight travel will be performed (number of trips, their purpose, and approximate dates). Who is the approving official? What is the method of payment? Indicate rates and total cost in the Financial Plan.

- The KDA Plant Protection and Weed Control Plant Program Manager is the approving official. Costs are included in the financial plan.
- The Fiscal Department at the Kansas Department of Agriculture will handle payment.
- Overnight travel will occur when conducting the statewide survey for spotted knapweed.

7. Are there any other contributing parties who will be working on the project?

☒ YES ☐ NO

If YES, answer below:

a. List Participating Agency/Institution:

- KDA Plant Protection and Weed Control
- Nemaha County Weed Department
- Jackson County Weed Department

b. List all who will work on the project:

- KDA Plant Protection and Weed Control
- Nemaha County Weed Department
- Jackson County Weed Department

c. Describe the nature of their effort:

- KDA will perform the site selection, biological control agent release, and surveying for spotted knapweed and *Larinus minutus* and *Cyphocleonus achates* surveying and monitoring.
- Nemaha and Jackson County Weed Department will help coordinate release site.

d. Contribution:

- KDA will perform the site selection, biological control agent release, and surveying for spotted knapweed and *Larinus minutus* and *Cyphocleonus achates* surveying and monitoring.
- Nemaha and Jackson County Weed Department will help coordinate release site.

VII. GEOGRAPHIC LOCATION OF PROJECT

A. Is the project statewide or in specific counties, townships, and/or national or state parks? (List all that apply)

The primary release site will be located in Nemaha County, Kansas, approximately 6 miles southeast of the town of Centralia. Nemaha County is located in northeast Kansas against the Nebraska border. The GPS coordinates of the release site are 39.667243, -96.098487. The secondary release site will be located in Jackson County, Kansas.

B. What type of terrain (e.g., cropland, rangeland, woodland) will be involved in the project?

The release site contains cropland and rangeland.

C. Are there any unusual features which may have an impact on the project or activity such as rivers, lakes, wild life sanctuaries, commercial beekeepers etc? (list all that apply)

None.

D. Are there tribal lands in proximity to the project area that may be impacted, positively or negatively, by the project?

The Pottawatomie Indian Reservation is located in Jackson County.

VIII. DATA COLLECTION AND MAINTENANCE

A. What type of data will be collected and how will it be maintained?

- Data collection will be both electronic and visual.

B. Address timelines for collection, recording, and reporting of data.

- Complete, accurate, and timely pest survey data will be entered into NAPIS using

approved protocol. The data entry requirements are:

- Enter new national, state, and county records into NAPIS database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.
- Non-time sensitive records, including negative data, must be entered into NAPIS within 2 weeks of confirmation.
- Negative data should be entered within 2 weeks of decommissioning a trap, obtaining the results from an identifier, or performing a laboratory assay (**It is not appropriate to wait until the end of the year to enter data**).
- Survey data will be collected with GPS technology for internal pathway analyses. Survey maps will be developed from approved GIS mapping software.

C. How will APHIS be provided access to the data?

- Data is available through NAPIS access.
- Data is available through KDA.

D. Identify if the data collected relate to the following measures.

* *N/A is non-applicable.*

- | | | | |
|---|---|-----------------------------|---|
| • The number of BC species that become established and sustainable | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A* |
| • The number of BC programs that are developed, implemented, or transferred to States or others | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Total number of sites that are managing targeted pests using biocontrol | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Total number of new agents identified, studied, or imported | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Total number of pre-release and site evaluations, or surveyed | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Total number of sites monitored | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Successful development of rearing and release technology | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Number of eligible sites with targeted pests participating in biocontrol | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Number of targeted pests managed using biocontrol | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Number of publications, presentations, databases, and educational material | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Number of agent colonies or insectaries created | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Time of monitoring released BC agents in the field | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Cost operating rearing laboratories | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Total number of BC individuals reared | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Total number of BC individuals released | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Cost of BC individual reared | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| • Cost of BC individual released | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

For data variables selected as YES, provide a description:

- *Larinus minutus* and *Cyphocleonus achates* will be the species that will be established and sustained.
- *Larinus minutus* and *Cyphocleonus achates* will be established as a insectary and transferred to other areas of Kansas.
- The insectary will be established in Nemaha County (primary) or Jackson County (secondary).
- Nemaha County (primary) or Jackson County (secondary) will be the site where spotted knapweed is known to exist and where *Larinus minutus* and *Cyphocleonus achates* will be released for biocontrol.
- Nemaha County (primary) or Jackson County (secondary) will be the location of pre-release and site evaluation. A survey will take place to identify new

populations of spotted knapweed.

- Nemaha County (primary) or Jackson County (secondary) will be the site monitored.
- Nemaha County (primary) or Jackson County (secondary) will be the site with targeted pests participating in biocontrol.
- *Larinus minutus* and *Cyphocleonus achates* will be the agent colony established as a insectary in Nemaha County
- After release in the spring, *Larinus minutus* and *Cyphocleonus achates* will be monitored for in the field.
- The total number of *Larinus minutus* released will be 700. The total number of *Cyphocleonus achates* released will be 700.
- The cost of *Larinus minutus* will be approximately (\$600/700 individuals) = \$0.86 per individual. The cost of *Cyphocleonus achates* will be approximately (\$600/700 individuals) = \$0.86 per individual.

E. All survey data from federal cooperative agreements involving pest surveys, will be entered into an APHIS, PPQ approved database. The State Plant Health Director, or his/her designee, is responsible for assuring data quality.

1. If using NAPIS database.

a. First record for the State and/or County will be entered within 48 hours of confirmation of identification by a qualified identifier.

All biological control data from cooperative agreements involving pest surveys will be entered by the State Survey Coordinator or KDA staff into the state survey database and NAPIS database.

b. All other required records, both positive and negative survey data, must be entered within two weeks of confirmation.

1. Complete, accurate, and timely pest survey data will be entered into NAPIS using approved protocol. The data entry requirements are:
 - Enter new national, state, and county records into NAPIS database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.
 - Non-time sensitive records, including negative data, must be entered into NAPIS within 2 weeks of confirmation.
 - Negative data should be entered within 2 weeks of decommissioning a trap, obtaining the results from an identifier, or performing a laboratory assay (**It is not appropriate to wait until the end of the year to enter data**).
 - Survey data will be collected with GPS technology for internal pathway analyses. Survey maps will be developed from approved GIS mapping software.

VIII. Reporting instructions:

A. Submit all reports to the APHIS Authorized Department Officer's Designated Representative (ADODR). Reports include:

1. Narrative accomplishment reports in the frequency and time frame specified in the Notice of Award, Article 4.
2. Financial Status Reports, SF-269, in the frequency and time frame specified in the Notice of Award, Article 4.
3. Standard Reporting Form for Biological Control Cooperative Agreements

SIGNATURES

ROAR

Date

ADODR

Date